

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN J. CRAGUN and
RANDALL R. SCHNIER

Appeal No. 95-1296
Application 08/073,257¹

ON BRIEF

Before KRASS, JERRY SMITH and FLEMING, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed March 29, 1993. According to appellants, the application is a continuation of Application 07/559,004, filed July 27, 1990, now abandoned.

Appeal No. 95-1296
Application 08/073,257

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 10, 12-16, 21-26 and 29-33, which constitute all the claims remaining in the application. An amendment after final rejection was filed on April 26, 1994 and was entered by the examiner. This amendment resulted in the withdrawal of a rejection of claim 15 under the second paragraph of 35 U.S.C. § 112.

The claimed invention pertains to a method and apparatus for storing and displaying data representative of a three dimensional image of an object. More particularly, the invention concerns the linking of data relating to a face of the object, a datum plane and tolerances associated with the object so that the relationship of this data is retained even when the view of the object is changed.

Representative claim 10 is reproduced as follows:

10. A method for dimensioning and tolerancing an object which includes a plurality of geometric elements on a display screen of a computer, said computer having means for storing data, said object shown in three dimensional space and having a selected dimension which can vary by a selected tolerance, the method comprising the steps of:

defining a first datum mathematically in three dimensional space, thereby creating a mathematical description of the first datum;

labeling said first datum;

Appeal No. 95-1296
Application 08/073,257

defining a face which is mathematically related to said first datum in three dimensional space;

selecting a type of tolerance between a geometric element of said object and a face; and

selecting a tolerance;

storing the mathematical description of a first datum;

storing the type of tolerance and the selected tolerance;
and

linking the face, the mathematical description of the first datum, and the type of tolerance and selected tolerance in the storage means of the computer.

The examiner relies on the following reference:

Fitzgerald, Jr. et al.	4,855,939	Aug. 08, 1989
(Fitzgerald)		

Claims 10, 12-16, 21-26 and 29-33 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Fitzgerald taken alone.

Rather than repeat the arguments of appellants or the examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into

consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 10, 12-16, 21-26 and 29-33. Accordingly, we reverse.

Appellants have nominally indicated that the claims on appeal do not stand or fall together [brief, page 4]. However, appellants have made no separate arguments with respect to any of the dependent claims. Since appellants have failed to appropriately argue the separate patentability of the dependent claims, the dependent claims will stand or fall with the independent claim from which they depend. See In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). Accordingly, we will only consider the rejection against independent claims 10, 21 and 29 as representative of all the claims on appeal.

Appeal No. 95-1296
Application 08/073,257

As a general proposition in an appeal involving a rejection under 35 U.S.C. § 103, an examiner is under a burden to make out a prima facie case of obviousness. If that burden is met, the burden of going forward then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

Appellants' initial argument is that the examiner has failed to make out a prima facie case of obviousness. Appellants should not confuse the prima facie case with the ultimate determination of the relative persuasiveness of the substantive arguments in support of the rejection. In order to satisfy the burden of presenting a prima facie case of obviousness, the examiner need only identify the teachings of the references, identify the differences between the prior art and the claimed invention, and provide a reasonable analysis of the obviousness

of the differences which an artisan might find convincing in the absence of rebuttal evidence or arguments.

With respect to independent claims 10, 21 and 29, the examiner has pointed out the teachings of Fitzgerald, has pointed out the perceived differences between Fitzgerald and the claimed invention, and has reasonably indicated how and why Fitzgerald would have been modified to arrive at the claimed invention. Each of the alleged differences between Fitzgerald and the claimed invention as argued by appellants has been addressed by the examiner and the obviousness of such differences has been explained by the examiner. In our view, the examiner's analysis is sufficiently reasonable that we find that the examiner has satisfied the burden of presenting a prima facie case of obviousness. That is, the examiner's analysis, if left un rebutted, would be sufficient to support a rejection under 35 U.S.C. § 103. The burden is, therefore, upon appellants to come forward with evidence or arguments which persuasively rebut the examiner's prima facie case of obviousness. Appellants have presented several substantive arguments in response to the examiner's rejection. Therefore, we consider obviousness based upon the totality of the evidence and the relative persuasiveness of the arguments.

At the outset, we note appellants' arguments with respect to the differences between their "invention" and the device disclosed by Fitzgerald [brief, pages 5-6]. We are not persuaded that these differences evidence error in the examiner's rejection because nonobviousness is not determined by the number of differences which can be found between a disclosed invention and a prior art device. Rather, obviousness is determined by whether the claimed invention would have been suggested by the applied prior art to one having ordinary skill in the art. Thus, we consider appellants' arguments only as they specifically relate to limitations recited in the claims.

With respect to each of independent claims 10, 21 and 29, appellants argue that the step of "selecting a type of tolerance" is not taught by Fitzgerald because Fitzgerald teaches only one type of tolerance and there can be no selection of only one type of tolerance [brief, page 7]. The examiner responds that Fitzgerald teaches at least two types of tolerances and explains that a model is not complete until the tolerances have been added to the model [answer, pages 8-9].

We agree with the examiner's position on this point. Any model in a solid modeling system designed for manufacture has the dimensions and tolerances placed thereon as noted by Fitzgerald

[column 1, lines 18-21]. Fitzgerald not only suggests that there are different types of tolerances such as linear and angular, but also that the tolerances associated with such a model are selected from standards published by the American Society of Mechanical Engineers. Thus, Fitzgerald would have suggested to the artisan the obviousness of selecting and placing any of the various types of tolerances which were typically placed on models on the models of Fitzgerald. In other words, it would have been obvious that any tolerances which could be selected in the prior art models were also selectable for the Fitzgerald models. Thus, we disagree with appellants' argument that Fitzgerald teaches that only a single type of tolerance is selected.

With respect to claim 10, appellants argue that Fitzgerald does not teach the step of "defining a face" nor the step of "linking" [brief, pages 8-10]. With respect to the former step, we fail to see how the faces of the solid object in Fitzgerald, which are stored in memory with respect to a local coordinate system [note FIG. 10A, box 110], can be stored without defining their mathematical relationship to the datums of the coordinate system. In other words, the faces of the solid object in Fitzgerald are clearly stored in memory in the form of a mathematical relationship to a local coordinate system.

With respect to the linking step, the examiner acknowledges that linking is not explicitly taught by Fitzgerald but argues that it would have been obvious to the artisan so that correct tolerance information would always be displayed to the viewer [answer, pages 9-10]. Of course, the step of linking a face of the object with the datum and the tolerance data is the linchpin of the invention because it links which face corresponds to which tolerance. We can find no teaching in Fitzgerald which links a particular face of the object with the datum and tolerance data as recited in claim 10. We also cannot accept the examiner's rationale as to why it would have been obvious to provide this linking step because it is based on the results achieved by appellants rather than on the teachings of the prior art. The examiner cannot rely on the advantages achieved by appellants as a basis to support the obviousness of the claimed invention. Since we agree with appellants that the linking step as recited in claim 10 is not suggested or made obvious by Fitzgerald, we do not sustain the rejection of claims 10 and 12-15.

With respect to independent claim 21, we agree with appellants that the specific claimed relationship between the first and second geometric portions and the datum and the

Appeal No. 95-1296
Application 08/073,257

relationship between these values and the tolerance value are not suggested by Fitzgerald for the same reasons discussed above with respect to the linking step. Therefore, we do not sustain the rejection of claims 21, 16 and 22-26.

With respect to independent claim 29, the same linking features as discussed above are recited. Therefore, we also do not sustain the rejection of claims 29-33.

In summary, the decision of the examiner rejecting claims 10, 12-16, 21-26 and 29-33 is reversed.

REVERSED

ERROL A. KRASS
Administrative Patent Judge

JERRY SMITH
Administrative Patent Judge

MICHAEL R. FLEMING
Administrative Patent Judge

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Appeal No. 95-1296
Application 08/073,257

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